

Attorney's Docket No.: 81862P248

Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re Patent Application of:

Madhu Rao et al.

Application No.: 09/921,936

Filed: August 2, 2001

For: NEIGHBOR DISCOVERY USING
ADDRESS REGISTRATION
PROTOCOL OVER ELMI

Examiner: Survillo, Oleg

Art unit: 2142

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DECLARATION OF SRIKANTHKUMAR HOSAKOTE UNDER 37 C.F.R. §1.132

I, Srikanthkumar Hosakote, declare as follows:

1. I am one of the inventors of the above-identified patent application that has been assigned to Cisco Technology, Inc. I have been employed by Cisco Systems, Inc. of San Jose, California from January 03, 1995 through the present. Cisco Systems, Inc. is the parent corporation of Cisco Technology, Inc.

2. The claims of this application have been attached as Exhibit A. I have reviewed the invention of this application set forth as the claims. Prior to December 6, 2000, Madhu Rao and I conceived of the invention, and that invention is set forth in the claims of Exhibit A.

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3. The declaration is made herein to establish derivation from the inventors of this application of anything disclosed in the cited publication, "Cisco Publication: Frame Relay ELMI Address Registration" by Cisco, posted on December 6, 2000 (hereinafter "Cisco Document") that relates to the claims of this application rather than being invented by the author of the Cisco Document which has been attached as Exhibit B. For example, the ELMI address registration feature described on pages 2 and 3 of the Cisco Document relates to the address registration information found in all of the independent claims of this application. The ELMI address registration feature has been derived from the inventors of this application.

4. The documentation process to generate configuration and product guides (e.g., Cisco Document) at Cisco Technology, Inc is as follows. Inventors provide functional and design specifications for a product to documentation writers. Based on the functional and design specifications, the documentation writers generate the configuration and product guides. Engineering teams that include the inventors review and approve these configuration and product guides. These configuration and product guides are then published and provided to customers.

5. Exhibit C is an ELMI Protocol Document entitled "IP Address/ IfIndex Registration Using ELMI protocol on the UFM Card" (hereinafter "ELMI Protocol Document"). The relevant dates have been redacted from Exhibit C. Madhu Rao authored the ELMI Protocol Document. Madhu Rao and I invented the subject matter of the ELMI Protocol Document that relates to the claims of this application.

6. Madhu Rao and I provided the ELMI Protocol Document to the documentation writers at Cisco Systems, Inc. Upon information and belief, Max

Anderson was the documentation person who authored the Cisco Document, Exhibit B, per page 7 of the ELMI-Address registration Program Plan (EDCS-49176) which has been attached as Exhibit D. The relevant dates have been redacted from Exhibit D. Max Anderson is not currently employed at Cisco Systems, Inc.

7. I hereby declare that the subject matter of the Cisco Document that is related to the claims of this application was derived from the ELMI Protocol Document that was provided to Max Anderson. Max Anderson did not invent the subject matter of the Cisco Document. Subject matter of the Cisco Document that is not related to the claims of this application was derived from other source(s) provided to Max Anderson. The subject matter of the Cisco Document that is related to the claims of this application should be attributed to the inventors of this application -- namely, Madhu Rao and myself.

8. The subject matter of the above-referenced application and claims is based on the ELMI Protocol Document which was prepared and dated prior to December 6, 2000. Figure 1 of the ELMI Protocol Document illustrates a wide area network management system to manage and configure a network of switches (e.g., lgx1-3, lgx4-6). Figure 1 also illustrates a local area network management system to manage and configure a network of routers (e.g., routers 1-3). Page 6 describes the discovery (mapping) of the router and WAN networks using address information (e.g., IP address, IfIndex information) in support of claims 13-16, 18-21, 34-37, 50-53, and 81. Page 8 and section 4.3 of the ELMI Protocol Document describe how the ELMI messages sent between devices (e.g., switches, routers) is enhanced with the address registration information (e.g., IP address, interface index). The figure at the top of page

8 illustrates a switch sending the ELMI message with the address information appended to the message to a router and vice versa. Pages 5-8 and Figure 1 of the ELMI Protocol Document provide support for claims 1, 2, 5, 7-9, 17, 22, 23, 27-29, 33, 38, 39, 43-45, 49, 54, 55, 59-61, 65, 66, 69, 71, 73, 74, 77, 79, and 81. Pages 11-14 disclose the interface index including port and slot numbers. For example, section 5.1.2 describes the incoming ELMI message being parsed and the router side IfIndex being updated internally in the port table for each port. Section 5.1.3 describes the UFM side IfIndex (interface index) being calculated based on the slot number and port number. Section 5.1.2 illustrates 6 reserved bytes (spare bytes) included as part of the address information. Pages 11-14 provide support for claims 3, 4, 6, 24-26, 40-42, 56-58, 67, 68, 70, 75, 76, and 78. Page 15 describes messages being sent with address information (e.g., IP address, IfIndex) during configuration changes. Page 10 describes the frequency (regular interval) of exchange for ELMI messages between routers and the UFM. Pages 10 and 15 provide support for claims 10-12, 30-32, 46-48, 62-64, 72, and 80. The ELMI Protocol Document provides support for the claims of the above-referenced application.

9. Attached as Exhibit E is an Invention Disclosure Document entitled "Neighbor Discovery Using Address Registration protocol running over ELMI" (hereinafter "Invention Disclosure Document") describing embodiments of the claimed invention. The relevant dates have been redacted from Exhibit E. The Invention Disclosure Document discusses advantages of implementing the ELMI-AR protocol on the UFM frame relay card and neighbor Cisco IOS. The Invention Disclosure Document

further discusses how Cisco products that provide network management solutions will use the ELMI-AR feature to provide complete network discovery.


10. I hereby declare that my invention was conceived prior to December 6, 2000. The Invention Disclosure Document was completed prior to December 6, 2000, and submitted to the Legal Department of Cisco Technology, Inc. Exhibit E demonstrates that the claimed invention was conceived prior to December 6, 2000.

11. The acts described herein which are relied upon to establish invention of the claimed subject matter were carried out in the United States of America, a NAFTA country, or a WTO country.

12. I declare, to the best of my knowledge, that all statements made in this document are true, and that all statements made on the information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified patent application or any patent issued thereon.

Dated:

Feb 17 / 08


Name: Srikantkumar Pesakote

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) A system, comprising:

a local area network management system to manage and configure a network of routers;

a wide area network management system to manage and configure a network of switches; and

address registration information to be appended to a message sent between a router of the network of routers and a switch of the network of switches over a connection between the [[first]] router and the [[first]] switch,

wherein either the local area network management system or the wide area network management system uses the address registration information to map the network of routers and the network of switches.
2. (Original) The system of claim 1, wherein the address registration information comprises an interface index.
3. (Previously Presented) The system of claim 2, wherein the interface index comprises a slot number from which the message was sent.
4. (Previously Presented) The system of claim 2, wherein the interface index comprises a port number from which the message was sent.

6. (Original) The system of claim 1, wherein the address registration information comprises spare bytes.
7. (Previously Presented) The system of claim 1, wherein the router sends the message.
8. (Previously Presented) The system of claim 1, wherein the switch sends the message.
9. (Previously Presented) The system of claim 1, wherein the message is an enhanced local management interface message.
10. (Currently Amended) The system of claim 1, wherein the message is sent when the network of switches and the network of routers are first configured.
11. (Currently Amended) The system of claim 1, wherein the message is sent when the network of switches or the network of routers has a change in configuration.
12. (Currently Amended) The system of claim 1, wherein the message is sent at a regular interval.

13. (Original) The system of claim 1, wherein the local area network management system uses the address registration information to map the network of switches.
14. (Original) The system of claim 13, wherein the local area network management system configures the network of switches.
15. (Original) The system of claim 1, wherein the wide area network management system uses the address registration information to map the network of routers.
16. (Currently Amended) The system of claim 15, wherein the wide area network management system configures the network of routers.
17. (Original) A method, comprising:
appending address registration information to a message; and
sending the message between a router of a router network and a switch of a switch network.
18. (Original) The method of claim 17, further comprising using the address registration information to map the router network from a wide area network management system controlling the switch network.
19. (Original) The method of claim 18, further comprising configuring the router network using the wide area network management system.

20. (Original) The method of claim 17, further comprising using the address registration information to map the switch network from a local area network management system controlling the router network.
21. (Original) The method of claim 20, further comprising configuring the switch network using the local area network management system.
22. (Original) The method of claim 17, wherein the address registration information comprises an Internet Protocol address.
23. (Original) The method of claim 17, wherein the address registration information comprises an interface index.
24. (Currently Amended) The method of claim 23, wherein the interface index comprises a slot number from which the message was sent.
25. (Currently Amended) The method of claim 23, wherein the interface index comprises a port number from which the message was sent.
26. (Original) The method of claim 17, wherein the address registration information comprises spare bytes.

27. (Currently Amended) The method of claim 17, wherein the router sends the message.
28. (Currently Amended) The method of claim 17, wherein the switch sends the message.
29. (Currently Amended) The method of claim 17, wherein the message is an enhanced local management interface message.
30. (Currently Amended) The method of claim 17, wherein the message is sent when the network of switches and the network of routers are first configured.
31. (Currently Amended) The method of claim 17, wherein the message is sent when the network of switches or the network of routers has a change in configuration.
32. (Currently Amended) The method of claim 17, wherein the message is sent at a regular interval.
33. (Currently Amended) A machine-readable tangible storage medium tangibly embodying a sequence of instructions executable by the machine to perform operations comprising:
appending address registration information to a message; and

sending the message between a router of a router network and a switch of a switch network.

34. (Currently Amended) The machine-readable tangible storage medium of claim 33, further comprising using the address registration information to map the router network from a wide area network management system controlling the switch network.
35. (Currently Amended) The machine-readable tangible storage medium of claim 34, further comprising configuring the router network using the wide area network management system.
36. (Currently Amended) The machine-readable tangible storage medium of claim 33, further comprising using the address registration information to map the switch network from a local area network management system controlling the router network.
37. (Currently Amended) The machine-readable tangible storage medium of claim 36, further comprising configuring the switch network using the local area network management system.

38. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the address registration information comprises an Internet Protocol address.
39. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the address registration information comprises an interface index.
40. (Currently Amended) The machine-readable tangible storage medium of claim 39, wherein the interface index comprises a slot number from which the message was sent.
41. (Currently Amended) The machine-readable tangible storage medium of claim 39, wherein the interface index comprises a port number from which the message was sent.
42. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the address registration information comprises spare bytes.
43. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the router sends the message.
44. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the switch sends the message.

45. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the message is an enhanced local management interface message.
46. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the message is sent when the network of switches and the network of routers are first configured.
47. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the message is sent when the network of switches or the network of routers has a change in configuration.
48. (Currently Amended) The machine-readable tangible storage medium of claim 33, wherein the message is sent at a regular interval.
49. (Original) A system, comprising:
a means for appending address registration information to a message; and
a means for sending the message between a router of a router network and a switch of a switch network.
50. (Original) The system of claim 49, further comprising a means for using the address registration information to map the router network from a wide area network management system controlling the switch network.

51. (Original) The system of claim 50, further comprising a means for configuring the router network using the wide area network management system.
52. (Original) The system of claim 49, further comprising a means for using the address registration information to map the switch network from a local area network management system controlling the router network.
53. (Original) The system of claim 52, further comprising a means for configuring the switch network using the local area network management system.
54. (Original) The system of claim 49, wherein the address registration information comprises an Internet Protocol address.
55. (Original) The system of claim 49, wherein the address registration information comprises an interface index.
56. (Currently Amended) The system of claim 55, wherein the interface index comprises a slot number from which the message was sent.
57. (Currently Amended) The system of claim 55, wherein the interface index comprises a port number from which the message was sent.

58. (Original) The system of claim 49, wherein the address registration information comprises spare bytes.
59. (Currently Amended) The system of claim 49, wherein the router sends the message.
60. (Currently Amended) The system of claim 49, wherein the switch sends the message.
61. (Currently Amended) The system of claim 49, wherein the message is an enhanced local management interface message.
62. (Currently Amended) The system of claim 49, wherein the message is sent when the network of switches and the network of routers are first configured.
63. (Currently Amended) The system of claim 49, wherein the message is sent when the network of switches or the network of routers has a change in configuration.
64. (Currently Amended) The system of claim 49, wherein the message is sent at a regular interval.
65. (Original) A router, comprising:
a routing unit to send a message to a first switch of a network of switches;

a connection to connect the routing unit to the first switch; and
an interface to append an address registration information to the message.

66. (Original) The router of claim 65, wherein the address registration information comprises an interface index.
67. (Currently Amended) The router of claim 66, wherein the interface index comprises a slot number from which the message was sent.
68. (Currently Amended) The router of claim 66, wherein the interface index comprises a port number from which the message was sent.
69. (Original) The router of claim 65, wherein the address registration information comprises an Internet Protocol address.
70. (Original) The router of claim 65, wherein the address registration information comprises spare bytes.
71. (Currently Amended) The router of claim 65, wherein the message is an enhancement local management interface message.
72. (Currently Amended) The router of claim 65, wherein the message is sent at a regular interval.

73. (Original) A switch, comprising:
a switching unit to send a message to a first router of a network of routers;
a connection to connect the switching unit to the first router; and
an interface to append an address registration information to the message.
74. (Original) The switch of claim 73, wherein the address registration information comprises an interface index.
75. (Currently Amended) The switch of claim 74, wherein the interface index comprises a slot number from which the message was sent.
76. (Currently Amended) The switch of claim 74, wherein the interface index comprises a port number from which the message was sent.
77. (Original) The switch of claim 73, wherein the address registration information comprises an Internet Protocol address.
78. (Original) The switch of claim 73, wherein the address registration information comprises spare bytes.
79. (Currently Amended) The switch of claim 73, wherein the message is an enhancement local management interface message.

80. (Currently Amended) The switch of claim 73, wherein the message is sent at a regular interval.
81. (Original) A method, comprising:
- appending address registration information to a message;
 - sending the message between a router of a router network and a switch of a switch network;
 - using the address registration information to map the router network from a wide area network management system controlling the switch network;
 - configuring the router network using the wide area network management system;
 - using the address registration information to map the switch network from a local area network management system controlling the router network; and
 - configuring the switch network using the local area network management system.